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Monitoring of Yukon River Chinook Returns to Mainstem Release Sites Upstream of the Whitehorse Rapids Dam

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and

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INTRODUCTION

Prior to the regulation of the Yukon River, Chinook Salmon spawned between the Whitehorse Rapids Hydro Dam and Lewes River. In 2005, Chinook fry from the Whitehorse Rapids Fishway were released into this area in an attempt to restore the run. These fry were expected to return, as spawners, in 2010. In this project we set out to enumerate these returning salmon in order to help determine if it would be possible to restore Chinook spawning to the project area. Collection of age-sex-length data and analysis of carcasses would allow us to gain some insight to the health of this run. Also, potential spawning sites were evaluated, and can be used to direct further development and regulation of this river.

METHODS

Four surveys of the Yukon River between the Whitehorse Rapids Hydro Dam and the Lewes River Bridge were conducted by boat. We attempted to spread these surveys throughout the duration of the Chinook run. Surveys were conducted on the following dates:

- August 29th, 2010
- September 7th, 2010
- September 15th, 2010
- September 19th, 2010

Each survey was carried out with 2 people in the boat searching for signs of redds, spawning salmon or carcasses.

RESULTS

One carcass was found on the September 7th, 2010 survey. This carcass was in extremely poor condition and it was not possible to collect age-sex-length data nor determine sex or origin. Essentially, this carcass was a piece of salmon skin; it may have perished close to where we found it, or it may have been carried by the river or eagles to that location. This makes any location data irreverent. No other signs of spawning Chinook were detected. On the August 29th survey we identified several locations with potential Chinook spawning habitat. However, because of the lack of spawning fish to support our identification of spawning sites, we cannot include this information with any confidence.

DISCUSSION

In 2010 numbers of Chinook salmon on the Yukon River mainstem were extremely low, which may account for the paucity of data collected during this project (Pers. comm. with Sean Collins, DFO, 12 Dec 2010). The September 7th survey was conducted on a rainy, overcast day which may have hindered our ability to detect redds, salmon or carcasses;

however, it was on the this survey that the sole carcass was discovered. Low returning salmon numbers for the 2010 run would mean a lower density of salmon in the river, which further decreased the likelihood of detection.

In 2005, Chinook salmon were released near the mouth of Wolf Creek, this is one of the fastest flowing sections of the river making detection difficult. Also, these salmon may have chosen to travel to spawning sites on Wolf Creek itself.

BUDGET

We were given $2000 from the Research and Enhancement Fund to complete this project. These funds were distributed as follows:

LINE ITEMS	BASE	UNITS	TOTAL REQUEST
PERSONNEL			
Wages	$20	80	$1,400.00
TOTAL SALARIES			**$1,400.00**
OTHER COSTS (including rentals)			
Boat Rental, Transportation and Fuel ($150/day)	$150	4	400
TOTAL OTHER COSTS			**$600.00**
TOTAL GRANTED FROM YR R&E FUND			**$2,000.00**

Sampling equipment was provided in-kind by the Department of Fisheries and Oceans Canada (DFO).

PROJECT PERSONNEL

Boat surveys were conducted by David Blakeburn and Daniel Jolkowski with the assistance of Manon Fontaine. Trix Tanner and Sean Collins of DFO provided equipment and technical support. Paul Sparling also provided technical support; particularity information regarding salmon spawning habitat and hydrology.